

A black and white photograph of the band Los Gatos. The image shows five band members: three men and two women. They are dressed in 1960s-style clothing, including suits, ties, and patterned shirts. The background is a plain, light-colored wall. The overall tone is serious and professional.

# Implementando Raft en Rust

**LOS GATOS**  
LA BALSA

# Que es Raft?

**Raft** is a **consensus** algorithm. It offers a generic way to distribute a **state machine** across a **cluster** of computing systems, ensuring that each node in the cluster agrees upon the same series of state transitions.

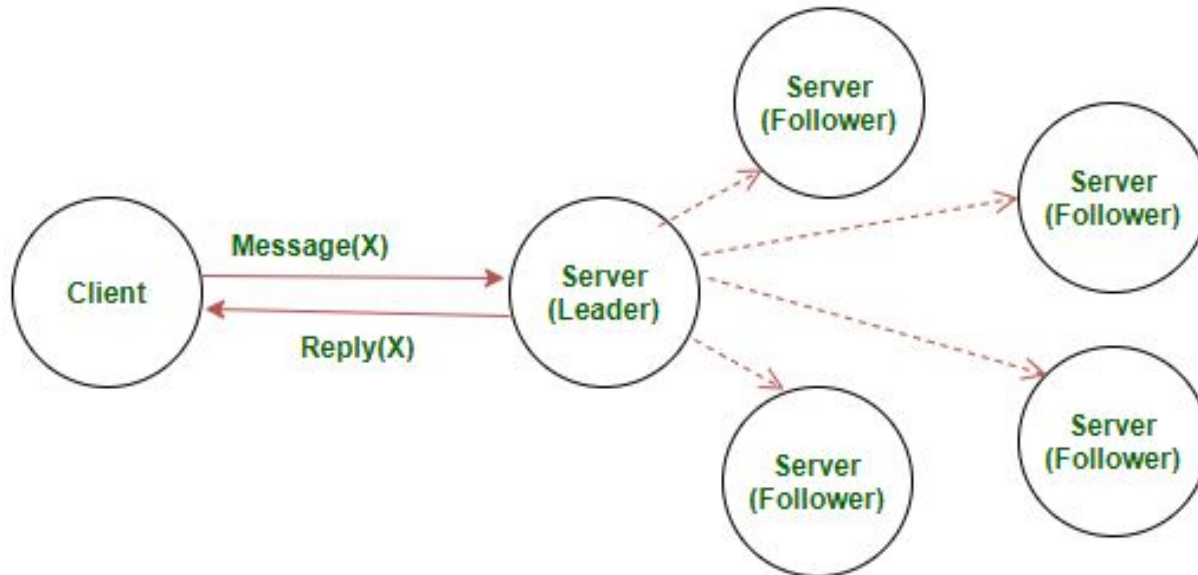
# Que es un algoritmo de consenso?

Es un algoritmo que en el contexto de los sistemas distribuidos busca que múltiples agentes lleguen a un acuerdo sobre el estado de un valor. Utilizados para lograr sistemas resistentes a fallos.

Ejemplos: Raft, Paxos, Viewstamped Replication, Hotstuff, Nakamoto consensus ....

# Ejemplo de aplicación

1. Caso unico server
2. Caso multiples nodos, resistente a fallos



## Volviendo a Raft - Usuarios



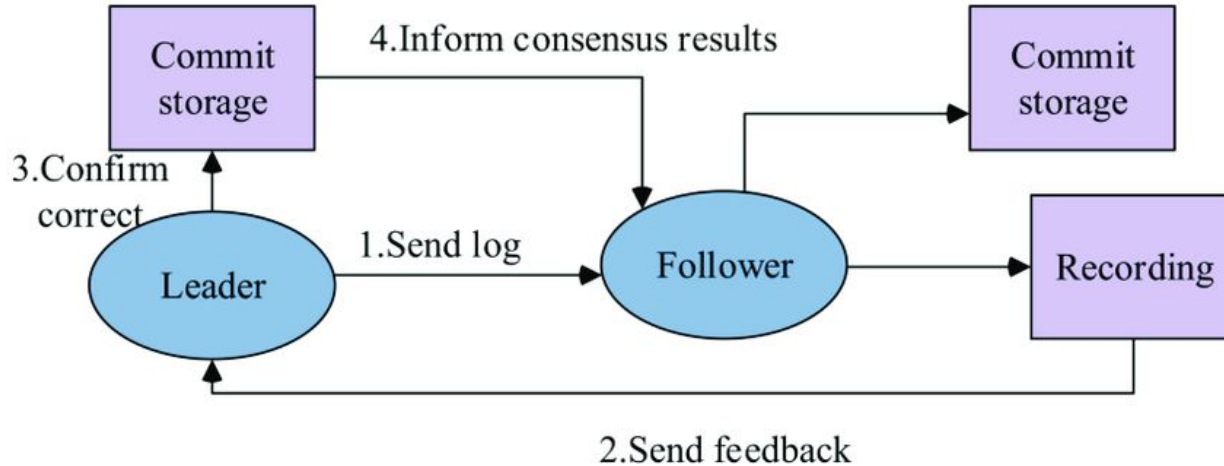
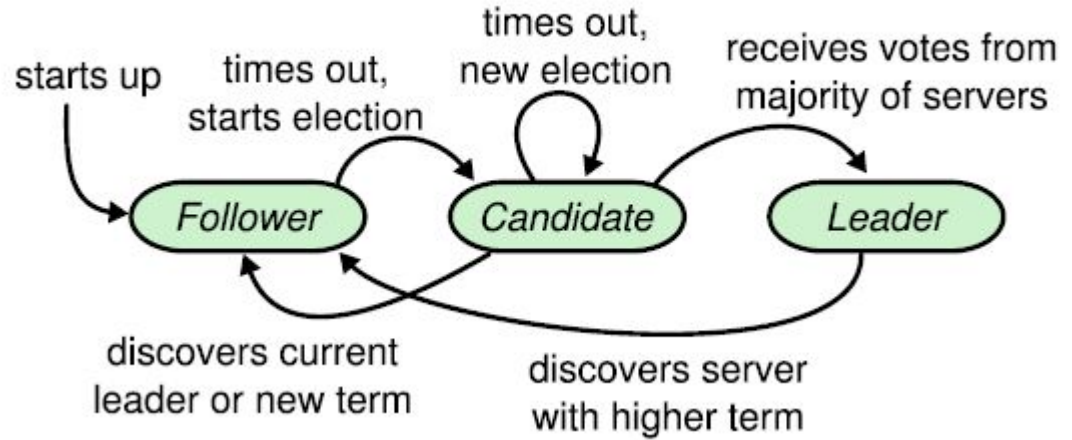
TiKV



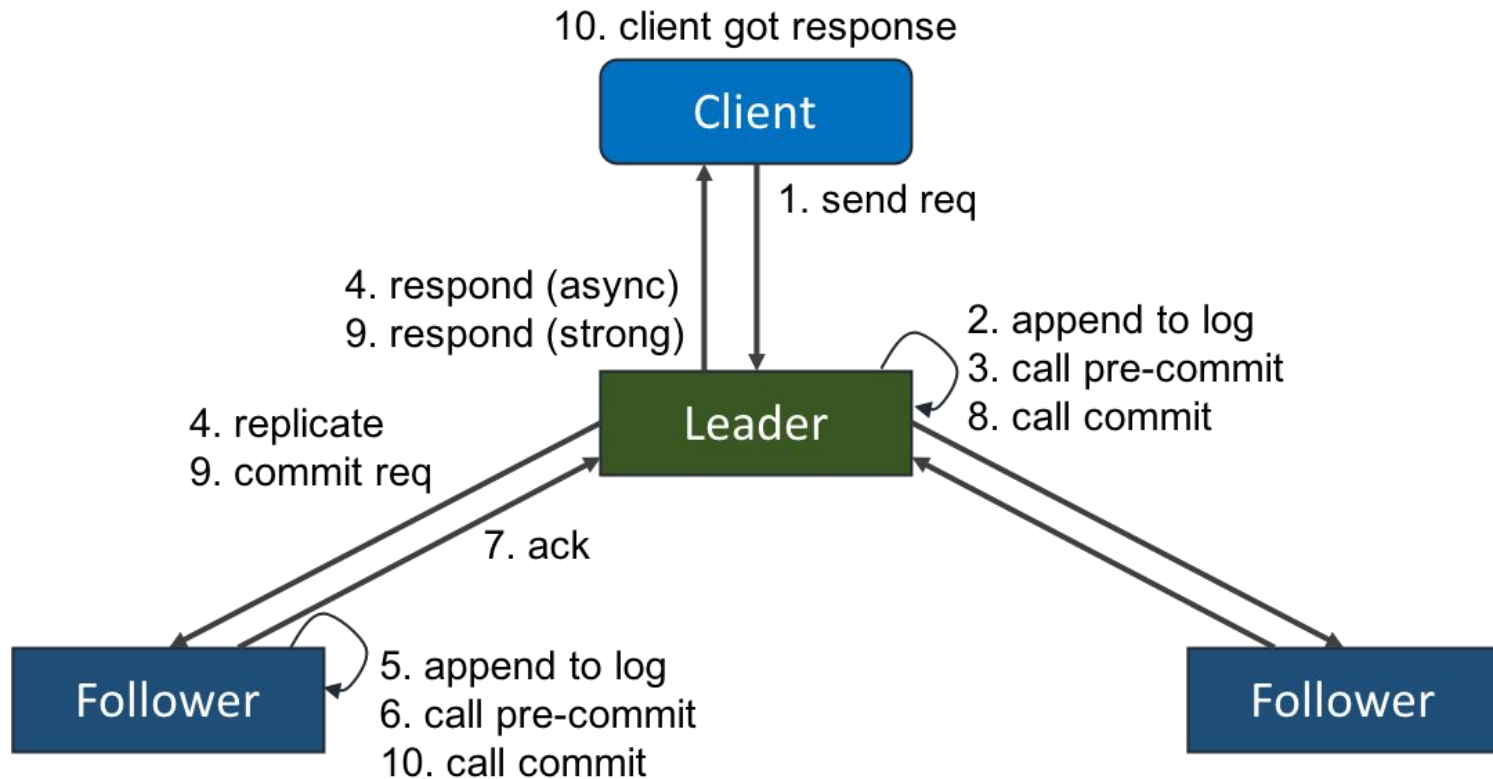
Entre otros ...

# Conceptos clave

- Leader Election
- Log Replication
- Safety

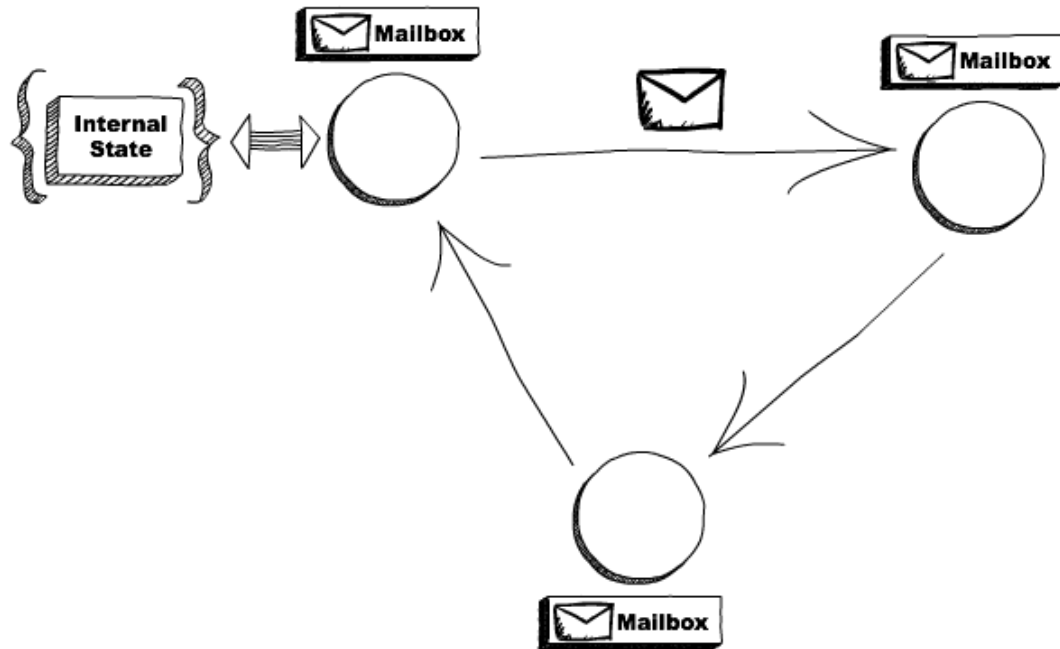


# Flujo general



# Implementación 1 - Arquitectura

- API JSON-RPC
- RaftActor (usando Tokio tasks)





# RaftActor

An actor is a computational entity that, in response to a message it receives, can concurrently:

- send a finite number of messages to other actors;
- create a finite number of new actors;
- designate the behavior to be used for the next message it receives.

**Code**